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STANDING COMMITTEE ON DEFENCE (1998-99)

TWELFTH LOK SABHA

MINISTRY OF DEFENCE

THE ADVANCED JET TRAINER

FOURTH REPORT

LOK SABHA SECRETARIAT
NEW DELHI

January, 1999/Pausa, 1920 (Saka)

FOURTH REPORT

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(1998-99)

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MINISTRY OF DEFENCE

THE ADVANCED JET TRAINER

Presented to Lok Sabha on .....
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LOK SABHA SECRETARIAT
NEW DELHI

January, 1999/Pausa, 1920 (Saka)

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FOURTH REPORT OF THE STANDING COMMITTEE ON DEFENCE (1998-99)
ON 'THE ADVANCED JET TRAINER'

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COMPOSITION OF THE STANDING COMMITTEE ON DEFENCE (1998-99)

Sqn. Ldr. Kamal Chaudhry — *Chairman*

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PREFACE

I, the Chairman, Standing Committee on Defence (1998-99), having been authorised by the Committee to submit the Report on their behalf, present this Fourth Report on 'Advanced Jet Trainer' (AJT).

2. The Standing Committee on Defence (1994-95) selected the subject for examination at their sitting held on *10th August, 1994*. The Standing Committee on Defence (1995-96) decided to continue the examination of the subject at their sitting held on *23rd May, 1995*.

3. The subject was again taken up for examination by the Standing Committee on Defence (1996-97) (Eleventh Lok Sabha) at their sitting held on 24th September, 1996 and by the Standing Committee on Defence (1997-98) at their sitting held on 27th August, 1997. The Standing Committee on Defence (1998-99) reselected the subject at their sitting held on 25th June, 1998.

4. A list of the dates on which the Committee was engrossed on the subject is given below :

(i)	23rd November, 1994 and 24th November, 1994 :	Sitting of Working Group IV for briefing by the Ministry of Defence on the subject.
(ii)	24th January, 1995	Tendering of expert opinion by Jasjit Singh, Director IDSA.
(iii)	7th February, 1995 :	Sitting of the Committee to take oral evidence of the representatives of Ministry of Defence.
(iv)	21st August, 1995 :	Sitting of the Committee to take oral evidence of the representatives of Ministry of Defence.
(v)	16th October, 1996	Presentation by the Ministry of Defence on the subject 'Advanced Jet Trainer' (AJT).
(vi)	22nd September, 1997 :	Oral evidence of the representatives of Ministry of Defence on the subject.

5. Besides holding the sittings as above, the following written information was received from the Ministry of Defence :

(i) A note on the requirements/parameters of the AJT as well as procedure adopted for tendering the selection of AJT.

(ii) Written replies to the questionnaire on AJT.

(iii) Replies to the supplementary list of points on the subject.

(iv) Reply to additional questionnaire.

(v) Updated brief on AJT for the Standing Committee on Defence.

6. The Committee (1998-99) wish to express their thanks to the Ministry of Defence for placing before them information on the subject.

7. The Committee (1998-99) would like to place on record their appreciation for the work done by the Standing Committees on Defence, for the years 1994-95, 1995-96, 1996-97 and 1997-98, and the Working Group IV, Standing Committee on Defence (1994-95) for their indepth examination of the subject. The Composition of the Committees, and Working Group are given at Appendices I—V.

8. The Committee (1998-99) would like to express their thanks to Shri Jasjit Singh, Director, Institute for Defence Studies and Analyses for sharing his expert views on the subject and also supplying written material for the benefit of the Committee.

9. The Report was considered and adopted by the Committee (1998-99) at their sitting held on 8th January, 1999.

10. Chapter-I of the Report is based on information/evidence furnished/tendered to the Committee by the Ministry of Defence. Chapter II of the Report contains Committee's conclusions and recommendations. For facility of reference the recommendations of the Committee (1998-99) have been printed in thick type in the body of the Report.

NEW DELHI;
January 15, 1999
Pausa 25, 1920 (Saka)

SQN. LDR. KAMAL CHAUDHRY,
Chairman,
Standing Committee on Defence.

THE ADVANCED JET TRAINER

CHAPTER I

HISTORY OF THE NEED AND EFFORTS MADE FOR ACQUIRING AN ADVANCED JET TRAINER FOR THE IAF*

Three stages of pilot training in IAF

Pilots in Indian Air Force are imparted training in the following three stages:

Stage-I: This is the basic stage of training, where the trainee is taught fundamental flying manoeuvres on an elementary aircraft. The training is for 6 months spanning over 80 flying hours.

Stage-II: This is slightly more advanced stage of training in which the operational potential of the trainee is developed through confidence-building and more difficult exercises. The training is for 6 months spanning over 120 flying hours.

Stage-III: While the first two stages are common to all trainees, stage-III is the final stage of training after trifurcating the trainee pilots who have completed the first two stages of training into fighter, transport and helicopter streams. In the fighter stream of stage-III training, the accent is on precision and tactical flying. The trainee is taught to use the aircraft as a weapons system both in offensive and defensive roles. He is also taught to fly the aircraft to the limits of its 'performance envelope' including departures, which would help him to recognise and recover from such situations in an operational aircraft. This prepares the trainee to take his place in a front-line squadron. The training is for 1 year spanning over 180 hours.

2. After stage-III training, the fighter pilots are posted to fighter squadrons. The pilot undergoes conversion onto the new type of operational aircraft and is trained thereafter over a period of one and a half years before he is declared fully operational in that aircraft when he is judged to be capable of utilising the aircraft effectively as a weapon platform.

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*Based on information/evidence furnished/tendered to the Committee by the Ministry of Defence, Government of India.

Aircraft used for training

3. The aircraft currently used for Stage-I training is HPT-32. For Stage-II training, indigenously manufactured Kirans and Polish Iskaras are being used. Stage-III training of pilots for the fighter stream is being conducted on (a) MiG-21 aircraft of the MiG Operational Flying Training Unit (MOFTU) and (b) Hunter aircraft of the Hunter Operational Flying Training Unit (HOFTU).

Obsolescence of present Trainer aircraft

4. Both the Hunter and the MiG-21 aircraft alongwith their trainer variants are ageing and require replacement. Hunter is a transonic combat aircraft. The last squadron was phased out in June 1996. The Hunter fleet belongs to the vintage of 1950s and is beset with innumerable problems. Its spares are no longer being manufactured by M/s. British Aerospace and their contractors. Therefore, the vendors have resorted to supplying reconditioned spares and consequently, whilst failure rates have been high, the serviceability and reliability have been very poor.

5. The MiG-21, which belongs to the vintage of 1960s, was developed as supersonic interceptor and its inherent design features preclude its suitability for using it as an advanced jet trainer for the following reasons:

(a) it has like all combat aircraft those characteristics that are the most undesirable for use at the low level experience of a Stage-III trainee pilot;

(b) the special Committee on Flight-Safety (1982) was highly critical of the large gap in performance between the MiG-21 and Stage-II training on Kirans/Iskara aircraft. The Committee advised the use of two seater trainer for dual as well as solo exercises, as it is relatively easy to fly as compared to the single seater aircraft.

(c) Type-66 aircraft which is the type trainer for the Mig-21 FL, has never been produced in India. Production of this aircraft in USSR also ceased in the late 1960s. Overhaul of these aircraft, which is being carried out in Russia also has been discontinued; and

(d) The aircraft is fast approaching the end of its total technical life and is due to be phased out and licence production of these aircraft at HAL ceased in the 1970s.

6. In view of the above, any proposal for upgrading/modernising the Hunter and MiG-21 trainer fleet is, economically and operationally, an unviable option.

Unsuitability of MiG-21 Trainers

7. The cadets trained through Hunter Operational Flying Training Unit and posted to Jaguar Squadrons are able to cope up reasonably well. During the last 10 years, Hunter Operational Flying Training Unit (HOFTU) had only 4 category-I accidents out of which only one was attributable to Human Error (A). Compared to this, during the same period, there had been 16 category-I accidents at the MiG Operational Flying Training Unit (MOFTU), out of which 12 were attributable to Human Error (A). From these figures, it is very apparent that while flight cadets trained in Stage-II on slower aircraft like Kiran and Iskara are able to achieve transition to Hunter/Jaguar aircraft with higher success rate, they find it more difficult to achieve transition to supersonic MiG-21 aircraft at MOFTU and MiG-21 squadrons. However after the phasing out of Hunter Trainers, the training programmes are being held on MOFTU and other Type-77 squadrons, irrespective of the type of aircraft the pilots will subsequently fly. The non-availability of a suitable trainer for Stage-III training has led to several air accidents in the training unit as well as in the front-line squadrons.

Special Committee on Flight Safety

8. The alarming rate of air accidents in the IAF as compared to other contemporary Air Forces, which were mainly due to the sub-optimal training imparted to the pilots for want of an Advanced Jet Trainer, caused serious concern in the early '80s. A special Committee on Flight Safety (SCFS) was constituted in August 1982 under the Chairmanship of the then Air Marshal La Fontaine to critically examine various operational and training aspects with a view to eliminating any organisational weaknesses. The Committee examined and analysed all accidents over a period of five years and recommended corrective measures. The Committee gave originally 45 recommendations which were re-arranged into 32 recommendations covering various aspects of pilot training. It pointed out the deficiencies in the training process of the pilots at Stage-III. 30 of the 32 recommendations of the Committee have been accepted. The remaining 2 recommendations which were not accepted related to some administrative matters not so important to the present context.

9. The IAF had an average of 40 category-I accidents per year in the '60s. In '80s this rate came down to 30 category-I accidents per year with an approximate decadal average of 1.15 per 10,000 flying hours. After the implementation of the recommendations of the Special Committee on Flight Safety, the IAF has been able to bring the rate down to 22 Category-I accidents per year with the present decadal average standing at 0.97 per 10,000 flying hours. From the year 1978-79 to 1998-1999, 545 category-I accidents had taken place resulting in loss of 551 aircraft and 200 lives of the pilots.

Need for an Advanced Jet Trainer

10. The Special Committee on Flight Safety after noting the fact that the Hunter and MiG-21 trainers were ageing and required replacement and also the fact that MiG-21 trainer was not found suitable for using as an Advanced Jet Trainer, emphasised the urgent need to replace them so that no inadequacies existed and the new system could be viable for 20-25 years. [This was emphasised in 1982. The 20-25 years period then thought of, would come to a close in 2002 to 2007.]

11. The Report of the Special Committee on Flight Safety in its analysis into Human Error accidents highlighted that the most repetitive pattern occurred in advanced exercises where high performance aircraft were being manoeuvred close to control boundaries resulting in loss of control as also when control responses by the pilot were delayed/ inadequate. Further, analysis has brought out a discernible deficiency in the deep conditioning process to generate fine pilot responses in the air, in handling high performance aircraft close to their control boundaries and inadequate stress tolerance in managing in-flight emergencies or uncontrolled/unusual light conditions. The Special Committee therefore recommended that Stage-III training should ensure confidence—building in the handling of such aircraft at near control boundaries. There is a thin line separating controlled flight and uncontrolled flight at these extremes of flight envelope. To achieve this training with confidence at the Stage-III, errors by trainees are to be expected. Any excursions beyond the control boundaries, therefore, should not result in a catastrophe. Hence, the need for demonstrability of stalling and spinning in Stage-III. The Special Committee has qualified its optimised training model on existing conditions and state of the art. This model is considered relevant for the next 10 years. It has categorically stated that it is not to be treated as a binding philosophy

for longer periods. Type-69 was chosen as the most suitable aircraft for Stage-III training in the then existing situation. As this aircraft is not capable of demonstration of intentional spin and recovery, this exercise was recommended to be done in Stage-II. The syllabus designed by the Special Committee, accordingly, included spinning as an exercise in Stage-II.

12. In the overall context, though there has been some improvement in the safety record after implementing the recommendations of the Special Committee on Flight Safety, the same would have been substantially better had the AJT been available. The non-availability of an Advanced Jet Trainer continues to take a heavy toll in terms of training related accidents.

Characteristics of an Advanced Jet Trainer

13. The Special Committee on Flight Safety spelt out the various characteristics of an Advanced Jet Trainer for the Stage-III training of fighter pilots. One of the important objectives of Stage-III training of fighter pilots in IAF ought to be to train them to safely handle the aircraft at the extremes of this operating envelope especially at high angles of attack and at low speed of flight regimes. This is considered essential so that a trainee pilot becomes proficient and confident in exploiting the operational combat aircraft in front-line squadrons, over its full performance envelope. Hence, it is imperative that the aircraft employed for Stage-III training has safe and docile handling characteristics at high angles of attack and low speeds. Ability to demonstrate spin and recovery technique would be considered an added advantage. Aircraft for such a role are specifically designed and have features like straight wings with appropriate inertia distribution. Such a design configuration enables the aircraft to have forgiving stall and spin characteristics. A generic trainer is specifically designed and built so as to include all such essential features. Keeping these factors in view, the requirement for a new trainer aircraft essentially stems from the need to replace the current Stage-III aircraft with the aim of improving the quality of training and for averting accidents.

14. Even from the angle of acquisition and maintenance costs, the AJT is preferable to a variant of a fighter for training purposes. For example, in maintaining the MiG aircraft, which is a fighter variant for training, the tyres have to be changed every 15-20 landings because the aircraft's touch-down speed is 350 Kms. per hour whereas an AJT

will touch-down at a speed of 200 Kms. per hour and thus the tyres of the AJT will last five times longer than those of the MiG. In MiG, the entire brake pads may have to be changed within 100 landings, whereas in the case of AJT, these will last four times more. The AJT is designed for training the inexperienced pilot. In MiG-21, the tail parachute which is used often is a high cost item made of nylon fibre material. Many such items are imported. The AJTs do not have such problem. Even in matter of fuel consumption, AJT will consume only one-fourth of fuel consumed by the MiG. The MiG cannot fly for more than 40 minutes whereas the AJT will fly for one and a half hours. Each aircraft is expected to fly four to six sorties per day. But MiG cannot fly six sorties and it gets quickly over-heated. Preferring a Fighter variant to the AJT for training is like preferring a sports car to Maruti for learning car driving.

Options for acquiring the AJT

15. Keeping in view the IAF requirement, the following options were considered for acquisition of a suitable aircraft:

(a) design, development and manufacture of an indigenous AJT; and

(b) outright purchase/licence manufacture of a suitable AJT available in the world market.

Chronology of efforts made for acquiring AJT

16. As a follow up of the recommendations of the Special Committee on Flight Safety, the Government made certain efforts in the direction of acquiring the AJT. These have been narrated below in a chronological order:

(1) In March 1984, the Air Headquarters cast the Air Staff Target (AST).

(2) In 1984, the Air Staff Target was sent to HAL for exploring the possibility of developing an indigenous AJT.

(3) In September, 1985, HAL indicated it's inability to meet the time frame while undertaking design and development of AJT in view of the design resources being committed to the LCA project, unless the time frame was shifted by two

years or assistance of a proven design house from abroad was contracted.

(4) In December 1985, Air Headquarters carried out paper evaluation and analysis of the available Jet Trainers in the World Market which included CASA Aviojet, MBB-339, British Hawk, Italian Sia Marchetti S-221, French Alpha Jet and HAL's Kiran Mark-II and Ajeet Trainer.

(5) In January 1986, the Czech L-39 was also similarly evaluated.

(6) Air Headquarters shortlisted only the British Hawk and Alpha Jet as meeting the Air Staff Requirements (ASR) of the IAF. Without flight-testing the Hawk and the Alpha Jet, the Government came to the conclusion that none of the aircraft other than these two could meet the ASRs of the IAF.

(7) In April 1986, flight evaluation of the Hawk and the Alpha Jet was carried out and Request for Proposal (RFP) dispatch was made.

(8) In November 1987, in a meeting chaired by the then Minister of Defence, the number of AJTs was reduced from 94 to 78 to train 66 fighter pilots per year.

(9) In 1987, on the advice of the Prime Minister's office, in order to explore the Rupee Payment Area, the Soviet offer of modifying the MiG-21 trainer as AJT was considered along with the trainer variants of MiG-29/SU-25 fighter aircraft. A paper study of the MiG-21 Bis was also carried out. Air Headquarters found the Soviet aircraft unsuitable as these did not meet many of the essential parameters.

(10) In 1988, M/s Northrop made an unsolicited offer of TF-5, a trainer variant of F-5E supersonic fighter aircraft. Air Headquarters considered and rejected the offer as unsuitable.

(11) In June, 1990, a presentation on the AJT was made to the then Minister of State for Defence at Air Headquarters. The then Minister of State for Defence decided to examine all options/ facets/issues involving various techno-economic aspects of the project. Consequently, a Committee chaired by the then Scientific Advisor to Minister of Defence was constituted. The Committee

examined four aircraft—the hybrid version of MiG-21, TF-5 of the Northrop, the Alpha Jet of the Dassault Aviation, France and the Hawk of the British Aerospace.

(12) In April 1991, the Technical Committee headed by Scientific Advisor to the Minister of Defence submitted their Report. The Committee confirmed that the French Alpha Jet and the British Hawk met the specifications and the French and the British companies were asked to submit fresh proposals.

(13) In February 1992, fresh Request for Proposals (RFPs) were issued to the two vendors—the Dassault Aviation, France and the British Aerospace, UK. The RFPs sought technical and commercial proposals for various options. Option number one was basically a direct purchase. The direct purchase was inclusive of the engine in respect of Alpha Jet whereas for the Hawk, it was without the engine because the Jaguar engine produced at HAL is the same as that of Hawk. Option number two was to assemble from completely knocked down parts with limited manufacture of specified components from raw materials. Option number three was related to full indigenous manufacture from raw materials.

(14) In March 1992, fresh proposals were received from both vendors.

(15) In May 1992, a technical Committee was constituted under the Chairmanship of ACAS (Plans).

(16) In September 1992, the technical Committee submitted their Report. They found both the Alphajet and the Hawk technically acceptable and recommended that both the vendors be called for initiating the process of commercial and technical negotiations.

(17) In December 1992, a High Level Expert Committee under the Chairmanship of Scientific Advisor to Minister of Defence was constituted.

(18) In April 1993, the High Level Expert Committee found that both the aircraft met the requirements of Air Force and shortfalls in a few Air Staff Requirement parameters were acceptable.

(19) Meanwhile, on request of the vendors, the validity of the proposals were extended till 31st December, 1993.

(20) In August, 1993, the Cabinet considered a note for procurement of the AJTs and approved the constitution of an Apex Body under the Principal Secretary to the Prime Minister and a Negotiating Committee to monitor and carry out negotiations with the two shortlisted vendors (Dassault Aviation, France and British Aerospace, UK). The Cabinet gave approval for acquisition of 66 AJTs with an option to acquire additional AJTs. A Technical Working Group was formed under the DCAS to go into the details of indigenous manufacture of AJT.

(21) In June 1994, the Russians provided details of three new AJTs under development, namely, the Yak-130 by the Yakovlev Design Bureau, MiG-AT by Mikoyan Design Bureau and the UTS-M of the Myasishchev Design Bureau. The Russians indicated their intention for transferring technology or licence production of these aircraft in India. However, their offers were not comprehensive and none of the aircraft had been test flown by June 1994.

(22) In September 1994, it was decided to confine the programme of AJT to option number three, that is, full indigenous manufacture. HAL was directed to prepare a Detailed Project Report in co-ordination with the two shortlisted vendors.

(23) In March 1995, the HAL submitted the Detailed Project Report. The Report reflected that the HAL would carry out the task through adjustments from the existing infrastructural resources with a possibility of marginal augmentation of facilities based on technology requirements.

(24) The Government informed Rajya Sabha on 16th March, 1995 that a letter from MAPO (Moscow Aircraft Producers Organisation) mentioning licence production had been received in the evening of 14th March, 1995. Russians offered MiG-MAPO on condition that a minimum of 20 fly away aircraft should be purchased and the transfer of technology for manufacture of 50 aircraft would commerce 3 years after that contract.

(25) In February 1996, the last round of discussions were held with the British Aerospace for Hawk.

(26) In April, 1996, Russians sent a commercial offer for MiG-AT which was just test flown. The prototype that was flown had French engines similar to the engines used in Alpha Jet of French. The Russians proposed to indigenise the production of the engines. The offer was however silent on transfer of technology for licence production of the aircraft in India.

(27) In February, 1997, the last round of discussions were held with Dassault Aviation, France for Alpha Jet.

(28) Meanwhile, HAL submitted an offer for design and development of an indigenous AJT known as HJT-37. Replies to queries on the offer have been received in May. 1998.

(29) Finally, as on date, the Government has not been able to decide upon any option for acquiring the AJT.

Cost, time and other comparative projections

Cost

17. As Hunter trainers with HOFTU were to be phased out in 1990-91 and the MiG-21 trainers with MOFTU in 1991-92, the Air Headquarters projected a total requirement of 105 AJTs, out of which 73 were projected as requirement by end of 1993 and the rest thereafter. Later, the number of AJTs projected came down to 94. In November 1987, in a meeting Chaired by the then Minister of Defence, the number of AJTs was reduced to 78 to train 66 fighter pilots in a year. In August, 1993, the Cabinet, however, approved for acquisition of 66 AJTs with option for acquiring additional AJTs.

18. As per the present estimates, the cost of acquiring 66 AJTs would be about 4000 to 4500 crores. An amount of Rs. 1000 crores has been projected in the Eighth Air Force Plan for the acquisition of AJT with the remaining amount as a carry over liability. This amount will have to come in as an additional allocation over and above the normal Air Force Budget. Subsequently, projections have also been made in the Ninth Air Force Plan. The expenditure is sought to be incurred in a phased manner. A down payment of 10% could be made on signing of the contract and the balance is likely to be spread over a period of five years. If it has to be allocated over the period of five years, Rs. 800 crores per year will be required. The Air Force has a capital budget for all its activities which is not even that much. The

Government had, therefore, kept evaluating all the options without clinching any one.

19. The cost of the indigenous AJT has been projected at Rs. 45 crores. The cost of 66 AJTs at this rate will come to Rs. 2970 crores. Any additional requirement for indigenous AJTs will have to be evaluated at an appropriate stage.

20. The Hawk is reportedly priced at around $ 19 million (approximately Rs. 59 crores) a piece and the unit cost of Alpha Jet is practically the same.

21. The new Russian Trainers (Sukhoi, MiG and Yak) are believed to be around $ 5-8 million (Rs. 15-25 crores) each. These Russian versions are still in the development process and would delay the acquisition indefinitely. Only the Yak-130 is funded by the Russian Government. MiG-AT would require a foreign customer to share in the development cost and risks. Yak-130 would initially be supplied to meet the large Russian demand and only thereafter, would be available for export to India. Yak-130 is yet to prove itself in air and acceptance of this aircraft would entail accepting an aircraft which has yet to prove itself. It would also have teething troubles since no Air Force would have tested it. As stated, the Russian are seeking co-operation from a host of French and American vendors for joining development and financing of the MiG-AT project and the likelyhood of its production is as yet remote. The Sukhoi-54 Trainer is a scaled down version of Su-27. It is still under the design stage and the Russian Air Force had already evaluated and preferred Yak-130 to Su-54. It is therefore futile to depend upon this option.

Time:

22. The HAL offer (through indigenous design and development route) was to start induction in 7 year time and not to complete the delivery of all the required number of AJTs. This implies that only the first aircraft would have entered service in the period of 7 years. On the other hand, the formulated delivery schedule for the two shortlisted aircraft (Alpha Jet and Hawk) through licence manufacture route envisages delivery of all the aircraft by the end of 77 months. Hence, the present option of producing AJT through licence manufacture out of any one of the two shortlisted option (Alpha Jet and Hawk), is still valid in terms of delivery schedule.

Other comparative projections

23. Indigenous development was the first option that was explored in the case of the AJT. Capital costs involved in indigenous design and development of a fighter aircraft programme are very high. Financial advantage would accrue only if the development costs can be amortised over a large number of aircraft. Alternatively, it could be cheaper to produce under licence a proven aircraft whose development costs are amortised over a large production line. Both the shortlisted aircraft [Alpha Jet and Hawk] fall in this category.

24. One of the chief parameters of the Air Staff Requirements of the Advanced Jet Trainer is the spin and recovery characteristic of the Trainer. Spin and Recovery was part of the training curriculum in UK and France using the Hawk and Alpha Jet.

25. The hawk engine has a lot of commonality with Jaguar engines being manufactured at HAL. Hawk is of vintage of 1970s and still in production. It has been designed for training purposes. 13 countries of the world have Hawk.

26. Alpha Jet is of the vintage of 1960s and production line has stopped. Alpha Jet was basically designed to be a light strike aircraft used for training purposes also. M/s. Dassault Aviations proposal envisages transfer of the manufacturing facility within 18 months of signing of contract. Spares supply during the life cycle of the aircraft has been guaranteed and would be built into the contract if M/s. Dassault Aviation are eventually chosen. 10 countries have Alpha Jet.

The Air Forces in India's vicinity

27. Pakistan has exchange programmes with a number of Air Forces in the Middle East and USA. In addition, PAF instructors undertake training in many Air Forces in the Middle East. This bestows an advantage in terms of the additional reservoir of aircrew who continue to remain current by flying with other Air Forces. PAF can draw on this reservoir in times of national need. On the other hand, IAF at present does not have any exchange programme with other Air Forces regarding flying. However, IAF has from time to time undertaken the task of training pilots from Iraq, Egypt, Singapore, Nigeria, Malaysia etc.

28. *Pakistan's military spending is constantly around 7% of its GDP whereas India's military spending stands at 2.5% of the GDP. Pakistan Air Force uses only 6% of American aircraft and others are either French or Chinese. Pakistan army uses about 20% of American equipment which in the next 7 to 8 years is likely to go out of service and thereafter, Pakistan will rely on Chinese tanks and guns. American weaponry is only 4% in Pakistan Navy and the effect of Chinese development is expected to be transferred to Pakistan. The latest class of French submarines will also join the Pakistan Navy shortly. Pakistan's naval capability is essentially focussed around submarines and the ability to launch anti-ship missiles from long range distances. The only way of effective defence against these is to have adequate air strike capability. There is also the possibility of the Saudis passing on data with the help of their AWACS to 20 Kms. inside Pakistan if Pakistan is at war with another country. China spends 6% of its GDP on defence. There are reports that the Chinese have substantially increased their military quality and that Israel has passed on some of the most up-to-date technology to China. Chinese naval presence in the Indian Ocean Region in a big way is also on the cards. Traditionally, the Chinese depended upon non-conventional weapons like missiles, nuclear devices, IRBMs and even ICBMs. They are now developing more accurate missiles which would be operational by the turn of the century. Aircraft and guns are being modernised. Though India holds qualitative and quantitative edges over Pakistan, India has not undertaken proper modernisation programmes for the past eight years on account of which there is a reducing capability on the Indian side *vis-a-vis* the upward trend of the capability of her neighbours.

*This paragraph is based on the opinion tendered to the Committee by the Director, IDSA.

CHAPTER II

COMMITTEE'S CONCLUSIONS AND RECOMMENDATIONS

29. After perusing the facts submitted by the Government and the expert who appeared before the Committee, as narrated in the previous chapter, the Committee state their conclusions and recommendations in the following paragraphs.

HAL's suggestion and Government's inaction

30. In September, 1985, when the Government asked the Hindustan Aeronautics Limited (HAL) to undertake the design and development of the AJT, the then Chairman, HAL requested the Government to shift the time frame by two years or to contract the assistance of a proven design house from abroad since the HAL's resources were already committed to the development of LCA (Light Combat Aircraft) and ALH (Advanced Light Helicopter). The Government knowing fully well the nature of protracted processes involved in various other options before them, clearly lacked vision in failing to heed to the advice of the HAL. The Committee feel that the Government had very casually responded to the suggestion of the HAL resulting in today's pathetic situation as regards acquisition of the AJT. **The Committee, therefore, recommend that the Government identify those at the decision making level who failed (i) to act on the suggestions of the HAL given to the Government in September 1985 and (ii) to keep the suggestions alive as a parallel route towards the acquisition of AJT when all other options were actively considered over a period of 13 years that followed, for initiating appropriate proceedings against them for dereliction of duty towards the nation.**

Viability of short-listed options

31. The Government have admitted that the Hunters which belonged to the vintage of 1950s have been phased out. They have further admitted that the MiG-21s which belong to the vintage of 1960s are in the extended period of operation and their extension of life cannot be further stretched. Of the short-listed options, the Alpha Jet of the French belongs to the vintage of 1960s and the Hawk of the British belongs to the vintage of 1970s. At the time when both short-

listed options were first found technically viable in 1986, even if Hawk was to be seriously considered, Hawk had an advantage of only 10 years over the outdated MiGs as well as the Alpha Jet. Alpha Jet whose vintage is as old as the MiG-21s, even today appears to be a live option with the Government. 12 years have passed since the Government made out their first affirmation in favour of the short-listed options. The Special Committee on Flight Safety (1982) while spelling out the characteristics of the Advanced Jet Trainer for the IAF and recommending its urgent induction for training purpose, opined that the new system could be viable for 20-25 years. This 20-25 years period, if computed from the day the Special Committee gave their Report, comes to a close in 2002-2007. The Committee therefore gravely doubt whether the options shortlisted in 1986 of the designs of the vintages of 1960s and 1970s would meet our training requirements upto the first quarter of the millennium ahead especially national resources, in enormous quantities, are to be applied for the acquisition. **The Committee are of the opinion that the Government were, from the beginning, concentrating and seriously examining only the Hawk and Alpha Jet options. The Committee are therefore constrained to express their serious displeasure over the failure of the Government to undertake proper paper and flight evaluations of all other technologically superior options so that the frugal resources of the nation are not, by fault, invested in any weak and unviable option. The Committee thus recommend to the Government to urgently evaluate all other options that have come into the market for the purpose of taking a decision in regard to the acquisition/manufacture of the AJT for the IAF.**

Review of Air Staff Targets/Requirements

32. The Committee were informed that pursuant to the recommendations of the Special Committee on Flight Safety (1982), Air Staff Targets/Requirements were fixed and notified in 1984. The Air Staff Targets were formulated on the basis of the recommendations made by the Special Committee in regard to pilot training in IAF. The Special Committee in their Report (1982) had prescribed an optimised training model for the IAF on the then existing conditions and State of the art. The model was considered relevant for 10 years. The Report categorically stated that the model was not to be treated as a binding philosophy for longer periods. Despite these recommendations, the Committee are pained to note that there had not been any purposeful review of the training model after adopting it for 10 years from the

angle of suitability of its further continuance after examining all relevant inputs, including the rate of air accidents due to Human Errors (A), the decadal average etc. Since such a review had not been undertaken by the Government, the Air Staff Targets/Requirements formulated in 1984 remained surprisingly static when all other tertiary activities in this direction like considering and keeping on evaluating whatever options that came on the way *vis-a-vis* the already shortlisted options, were at their peak. The Government did not even think that, during the long period when shortlisted options and other options underwent scrutiny and re-scrutiny, it was all the more necessary to review the training model and consequently the review of the Air Staff Target itself, which is the basis on which options should have been evaluated. The training module and the AST remained static much against the recommendations of the Special Committee on Flight Safety despite the fact that the threats from neighbouring Air Forces were on the increase. **The Committee, therefore, recommend to the Government to seriously and urgently consider the question of reviewing the existing training model of IAF pilots and the Air Staff Target/ Requirements for the AJT and also undertake a periodic review of the same thereafter.**

Frequent re-committal of the proposal to Committees/Technical Groups

33. The chronology of efforts of the Government towards acquiring the AJT of the specifications laid down in the Air Staff Target in 1984, show that the Government, after issuing the first dispatch of the request for Proposal to the two shortlisted vendors (Alpha Jet and Hawk) in April, 1986, subjected the proposal to Technical Committees/ High Level Expert Committes/Apex groups and other such bodies as frequently as possible to keep the time going up to this hour thereby incurring a time over run of nearly one and a half decades. The cost over runs have also consequently got hiked. The Committee feel that the Government had been indulging in this procrastinative technique of committing and re-committing the matter *ad nauseum* to various Technical Committees and other bodies with a view to wash their hands off the matter albeit for frequent temporary durations. The Committee also feel that this deplorable methodology was being adopted by the Government for inventing alibis for explaining the unpardonable delay in making efforts towards materialisation of the project. This had happened despite the Government's admission that the non-availability of an Advanced Jet Trainer continues to take a

heavy toll in terms of training related accidents. The Committee feel that because of the indecision of the Government (i) the training of the pilots had adversely suffered, (ii) many pilots got killed and (iii) many aircraft got destroyed resulting in loss of crores of rupees in Indian currency and foreign exchange. **The Committee take a serious view of the existing poor decision making mechanism of the Government for acquiring essential equipment for defence and recommend that Government take urgent measures to streamline the procedures laid down for selection, trial, acquisition and induction of all requisite equipment for defence so that the entire procedure so laid down takes a very reasonable time.**

Resource mobilisation

34 (a) During the 14 years period since the first AST was cast for the AJT, the Government constituted various Technical Committees and other groups for evaluating the options for the AJT before them. On no single occasion, any effort had been made to specially and exclusively study the feasibilities of funding the project. This bares open the lack of honest intentions of the Government in acquiring the AJT for the IAF. Except making projections in the Eighth and Ninth Defence Plans, attention to the area of financing the project in a concentrated manner was not paid by the Government.

(b) On the kind of sacrifice the IAF pilots are called upon to make, the Committee were informed that in case of an emergency or something goes wrong with the aircraft, the instructions are that first the pilot should try to control the aircraft as long as he has got sufficient height and time available; he must make an attempt to save the aircraft. Second, he must, during this process, steer the aircraft away from the populated area. Third, he must save himself. In all emergencies, the pilot first endeavour to save the aircraft, then the people underneath, and finally he ejects. One of such emergencies when an IAF pilot puts his life third in order to the national resources invested in the aircraft and the precious lives of the civil population of the ground whom he always defends, is very frequently created for want of an Advanced Jet Trainer for stage-III training.

(c) The Government on the other hand appear to be showing no keen interest in the matter. The fact that for more than around one and a half decade that they had not been able to translate

the demand of the IAF into reality but were on a spree of scrutinising and re-scrutinising options before them through Committees/Groups speaks volumes for their monumental misdirection of their efforts. **The Committee, therefore, recommended that, as the acquisition of the AJT for the IAF brooks no delay, the Government should within the shortest possible time, mobilise the requisite resources, clinch one of the options before them, old or fresh, without losing further time; the option chosen should match the parameters laid down in the AST, as quickly reviewed, so that the Trainers inducted for the stage-III training in the IAF serve the Force for at least a quarter of a century to come. The Committee also strongly recommend that the Government in addition to urgently acquiring/licence producing the AJT should keep the parallel channel of designing and developing a futuristic AJT for the IAF through the HAL or other indigenous source, alive.**

New Delhi;
January 15, 1998
Pausa 25, 1920 (Saka)

SQN. LDR. KAMAL CHAUDHRY,
Chairman,
Standing Committee on Defence.

MINUTES OF THE FIRST SITTING OF WORKING GROUP IV OF THE STANDING COMMITTEE ON DEFENCE (1994-95)

The Working Group met on Wednesday, the 23rd November, 1994 from 1100 hrs. to 1300 hrs.

PRESENT

Shri Amal Dutta — *Convenor*

MEMBER

2. Shri B.B. Dutta
3. Shri Prakash Narain Tripathi
4. Shri Abhay Pratap Singh
5. Shri Jagat Vir Singh Drona
6. Shri Satchidananda
7. Shri Abdussamad Samadani
8. Shri Suresh Kalmadi

SECRETARIAT

1. Shri V.N. Gaur — *Joint Secretary*
2. Shri A.K. Singh — *Assistant Director*

Representatives of the Ministry of Defence

1. Shri K.A. Nambiar, Defence Secretary
2. Shri T.K. Banerji, Addl. Secretary
3. Air Marshal S.R. Deshpande, DCAS
4. Shri Vinod Rai, JS (Air)
5. Shri Vinod Mishra, Addl. FA (M)
6. Air Vice Mshl. S. Krishnaswamy, ACAS (Plans)
7. Air Cmde. M.B. Madon, PM, APMO
8. Air Cmde. N. Minocha, DASR

9. Wg. Cdr. S. Sukumar

10. Wg. Cdr. D.K. Bhatt

11. Wg. Cdr. J. Neri

12. Flt. Lt. Sudhir Saxena

2. At the outset, the Convenor welcomed the Members of the working Group to its first meeting. The Convenor also welcomed the Defence Secretary and other Senior Officers of Ministry of Defence and Indian Air Force and invited them to make a presentation on Advanced Jet Trainer (A.J.T.).

3. The Ministry of Defence thereafter made a presentation on the subject 'A.J.T.' with the help of slides etc.

4. During presentation the representatives of the Ministry of Defence briefed the Members on the need, the qualitative requirements, procedure adopted for the selection of the A.J.T., the training syllabus of the pilots and the evolution of stage III training for which the Advanced Jet Trainers were required, the use of Hunter and MIG variants for training of the pilots, the features required in the Advanced Jet Trainer as per the Air Staff Requirements (A.S. Rs.) of IAF, a comparison of the basic features of various types of trainers available in the world market and the use of trainers and training philosophy of the other Air Forces of the world. The acquisition process, which has been going on for the last decade was explained to the Members in great details.

5. A record of briefing given by the representatives of the Ministry of Defence during presentation was kept.

6. The Working Group then adjourned to meet again on 24th November, 1994.

MINUTES OF THE MEETING OF MEMBERS OF WORKING GROUP IV OF THE STANDING COMMITTEE ON DEFENCE HELD ON 24.11.94

The Members of Working Group met on Thursday, the 24th November, 1994 from 1000 hrs. to 1130 hrs.

PRESENT

Shri Amal Dutta —*Convenor*

2. Shri Suresh Kalmadi

SECRETARIAT

1. Shri V.N. Gaur — *Joint Secretary*

2. Shri A.K. Singh — *Assistant Director*

Representatives of the Ministry of Defence

1. Shri K.A. Nambiar, Defence Secretary
2. Shri T.K. Banerji, Addl. Secretary
3. Air Marshal S.R. Deshpande, DCAS
4. Shri Vinod Rai, JS (Air)
5. Shri Vinod Mishra, Addl. FA(M)
6. Air Vice Mshl. S. Krishnaswamy, ACAS (Plans)
7. Air Cmde. M.B. Madon, PM, APMO
8. Air Cmde. N. Minocha, DASR
9. Wg. Cdr. S. Sukumar
10. Wg. Cdr. D.K. Bhatt
11. Wg. Cdr. J. Neri
12. Flt. Lt. Sudhir Saxena

2. The Members of the Working Group held informal discussion with the representatives of the Ministry of Defence on the subject 'Advanced Jet Trainer' (A.J.T.).

3. The Members expressed concern over the delay in the decision making process in regard to acquisition of A.J.T. which had already taken a decade. It was *inter alia* pointed out that further delay in the matter would lead to loss of valuable lives and also financial losses for the Indian Air Force.

4. The representatives of the Ministry of Defence clarified certain points raised by the Members in the light of the presentation made by them on the subject on the previous day. The Members desired that the Committee might be kept posted on the latest developments in regard to the acquisition of the Advanced Jet Trainer.

5. A record of the discussion was kept.

6. The meeting then adjourned.

MINUTES OF THE SIXTH SITTING OF THE STANDING COMMITTEE ON DEFENCE (1994-95)

The Committee sat on Tuesday, the 24th January, 1995 from 1500 hours to 1745 hours.

PRESENT

Shri Buta Singh—*Chairman*

MEMBERS

Lok Sabha

2. Shri Ayub Khan
3. Shri Bhupinder Singh Hooda
4. Shri Nandi Yellaiah
5. Sqn. Ldr. Kamal Chaudhry
6. Shri Ram Niwas Mirdha
7. Shri Yoganand Saraswati
8. Shri Prakash Narain Tripathi
9. Shri Jagat Vir Singh Drona
10. Shri Gabhaji Mangaji Thakore
11. Shri Chhedi Paswan
12. Shri Abhay Pratap Singh
13. Shri Amal Dutta
14. Shri Hannan Mollah
15. Maj. Gen. R.G. Williams

Rajya Sabha

16. Shri B.B. Dutta
17. Shri Misa R. Ganesan

18. Shri Suresh Kalmadi
19. Shri K.R. Malkani
20. Shri S. Jaipal Reddy
21. Shri Satchidananda
22. Shri Sushil Kumar Sambajirao Shinde
23. Shri Digvijay Singh

SECRETARIAT

1. Smt. Roli Srivastava — *Joint Secretary*
2. Shri K.L. Narang — *Deputy Secretary*
3. Shri A.K. Singh — *Under Secretary*

Expert

1. Shri Jasjit Singh, Director, Institute for Defence Studies and Analyses

2. At the outset, the Chairman welcomed the Members of the Standing Committee on Defence. The Committee invited Shri Jasjit Singh, Director, Institute for Defence Studies & Analyses to give a presentation on the subject 'Advanced Jet Trainer' (AJT) to the Members. Shri Jasjit Singh then made his presentation to the Committee. Thereafter, he replied to various questions asked/clarifications sought by Members.

3. A verbatim record of the proceedings was kept.

4. The Chairman thanked Shri Jasjit Singh for explaining the details on the subject.

(The witness then withdrew)

The Committee then adjourned.

MINUTES OF THE SEVENTH SITTING OF THE STANDING COMMITTEE ON DEFENCE (1994-95)

The Committee sat on Tuesday, the 7th February, 1995 from 1100 hours to 1300 hours.

PRESENT

Shri Buta Singh — *Chairman*

MEMBERS

Lok Sabha

2. Shri Ayub Khan
3. Shri Nurul Islam
4. Shri Bhupinder Singh Hooda
5. Shri Vijay Naval Patil
6. Shri Ram Niwas Mirdha
7. Shri Umrao Singh
8. Shri Yoganand Saraswati
9. Shri Prakash Narain Tripathi
10. Shri Jagat Vir Singh Drona
11. Shri Chun Chun Prasad Yadav
12. Shri Abhay Pratap Singh
13. Shri Amal Dutta
14. Shri Hannan Mollah
15. Shri Indrajit Gupta
16. Maj. Gen. R.G. Williams

Rajya Sabha

17. Shri B.B. Dutta
18. Shri Satchidananda

SECRETARIAT

1. Smt. Roli Srivastava — *Joint Secretary*
2. Shri K.L. Narang — *Deputy Secretary*
3. Shri A.K. Singh — *Under Secretary*

Representatives of the Ministry of Defence

1. Shri K.A. Nambiar, Defence Secretary
2. Shri T.K. Banerji, Addl. Secretary (B)
3. Shri Vinod Rai, JS (Air)
4. Air Vice Mshl. S. Krishnaswamy, ACAS (Plans)
5. Air Cmde. J. D' Souza, PM, APMO
6. Air Cmde. N. Minocha, DASR
7. Wgg. Cdr. J. Neri, DPM, APMO
8. Flt. Lt. S. Saxena, APM, APMO

2. At the outset, the Chairman welcomed the Defence Secretary and his colleagues to the sitting of the Committee and invited their attention to the provisions contained in Directions 55 & 58 of the Directions by the Speaker, Lok Sabha.

3. The Committee heard oral evidence of the representatives of the Ministry of Defence on the points arising out of examination of the subject 'Advanced Jet Trainer' (AJT).

4. A verbatim record of the evidence was kept.

5. The Committee decided to take further evidence of the representatives of the Ministry of Defence at a future date.

(The witnesses then withdrew)

The Committee then adjourned.

MINUTES OF THE SEVENTH SITTING OF THE STANDING COMMITTEE ON DEFENCE (1995-96)

The Committee sat on Monday, the 21st August, 1995 from 1530 hrs. to 1715 hrs.

PRESENT

Shri Indrajit Gupta—*Chairman*

MEMBERS

Lok Sabha

2. Shri Nurul Islam
3. Shri Bhupinder Singh Hooda
4. Shri Manikrao Hodalya Gavit
5. Sqn. Ldr. Kamal Chaudhry
6. Shri Ram Niwas Mirdha
7. Shri Sharad Dighe
8. Shri Yoganand Saraswati
9. Shri Amal Dutta
10. Shri Hannan Mollah
11. Shri Pratap Singh
12. Maj. Gen. R.G. Williams

Rajya Sabha

13. Shri B.B. Dutta
14. Shri Misa R. Ganesan
15. Shri Hiphei
16. Shri Suresh Kalmadi
17. Shri S. Jaipal Reddy

18. Shri Satchidananda
19. Shri Sushil Kumar Sambhajirao Shinde
20. Shri Gopalsinh G. Solanki

SECRETARIAT

1. Shri K.L. Narang — *Deputy Secretary*
2. Shri A.K. Singh — *Under Secretary*

Representatives of the Ministry of Defence
Department of Defence

1. Shri K. Srinivasan, Additional Secretary (KS)
2. Shri Vinod Rai, Joint Secretary (Air)
3. Shri M.S. Sokhanda, Joint Secretary (E)
4. Air Vice Marshal S. Krishnaswamy (Air HQrs.)
5. Shri V. Ravindran, Deputy Secretary (E)
6. Shri K.L. Sharma, Under Secretary (Parl.)
7. Shri R.K. Misra, Section Officer (Parl.)
8. Shri N.S. Nair, Parliament Asstt.

Department of Defence Production & Supplies

1. Shri R.N. Sharma, Chairman, HAL

Department of Defence Research & Development

1. Dr. A.P.J. Abdul Kalam, Secretary (DR&D)
2. Shri K. Santhanam, Chief Adviser (Tech.)
3. Shri K.N. Singh, Chief Adviser (Mgt.)
4. Dr. V.K. Aatre, Distinguished Scientist
5. Dr. Kota Harinarayana, Programme Dir., ADA
6. Shri K. Srinivasa, Chief Executive CEMILAC
7. Shri R. Swaminathan, Chief of Resources
8. Shri Narender Singh, Director/Tech. Coord.

9. Shri Ajay Kumar, Dir., AERO

10. Shri B.M. Sharma, Addl. Dir., AERO

11. Shri R.K. Chauhan, Jt. Dir. Tech. Coord.

2. At the outset, the Chairman welcomed the Defence Secretary and his colleagues to the Committee and invited their attention to the provisions contained in Directions 55 and 58 of the Directions by the Speaker, Lok Sabha.

3. The Committee then resumed oral evidence of the representatives of the Ministry of Defence on the subject 'Advanced Jet Trainer' (AJT).

4. A verbatim record of the evidence was kept.

(The witnesses then withdrew)

The Committee then adjourned.

MINUTES OF THE FIFTH SITTING OF THE STANDING COMMITTEE ON DEFENCE (1996-97)

The Committee sat on Wednesday, the 16th October, 1996 from 1100 hrs. to 1330 hrs. and from 1530 hrs. to 1630 hrs.

PRESENT

Shri B.K. Gadhvi—*Chairman*

MEMBERS

Lok Sabha

2. Shri Banwari Lal Purohit
3. Shri Baburao Paranjpe
4. Lt. Gen. Shri Prakash Mani Tripathi
5. Shri Rajendra Agnihotri
6. Dr. Chhatrapal Singh
7. Dr. Vallabhbhai Kathiria
8. Shri Ram Chandra Benda
9. Col. Sona Ram Choudhury
10. Dr. Mallikarjun
11. Shri Suresh Kalmadi
12. Shri P. Upendra
13. Shri P. Namgyal
14. Maj. Gen. Bikram Singh
15. Shri Hannan Mollah
16. Shri A. Sampath
17. Shri C. Narasimhan
18. Shri T. Nagaratnam
19. Shri Nitish Kumar
20. Shri Major Singh Uboke

Rajya Sabha

21. Shri Peter. S. Alphonse
22. Shri Lachman Singh
23. Shri Satchidananda
24. Shri Surendra Kumar Singh
25. Shri K.R. Malkani
26. Shri N. Thangaraj Pandian
27. Shri Adhik Shirodkar
28. Shri Suresh A. Keswani

SECRETARIAT

Shri V.N. Gaur — *Director*

Representatives of Ministry of Defence

1. Shri T.K. Banerji, Defence Secretary
2. Shri K. Srinivasan, Addl. Secretary (KS)
3. Shri Ashok Kumar, Addl. Secretary
4. Shri M.S. Sokhanda, Joint Secretary (E)

In the Forenoon Session (Briefing on AJT)

1. Shri T.S. Vijayaraghavan, Secretary (DP&S)
2. Shri D.K. Chet Singh, Financial Adviser (DS)
3. Shri Vinod Rai, JS (Air)
4. Shri A.V. Singh, JS (HAL)
5. Air Marshal M.S. Vasudeva, UVSM VM-DCAS
6. AVM J.S. Sisodia, AVSM VM-ACAS (Plans)
7. Air Cmde. M.M. Sehgal, DM APMO

2. At the outset, the Chairman welcomed the Defence Secretary and his colleagues to the sitting of the Committee and invited their

attention to the provisions contained in Direction 55 and 58 of the Directions by the Speaker, Lok Sabha.

3. The representatives of the Ministry of Defence briefed the Committee on the points arising out of examination of the subject 'Advanced Jet Trainer'. The representatives of the Ministry then explained and elaborated on the queries from the Members.

4. ** ** ** **

(The witnesses then withdrew)

The Committee then adjourned.

MINUTES OF THE SECOND SITTING OF THE STANDING COMMITTEE ON DEFENCE (1997-98)

The Committee sat on Monday, the 22nd September, 1997 from 1100 hrs. to 1300 hrs.

PRESENT

Shri B.K. Gadhvi—*Chairman*

MEMBERS

Lok Sabha

2. Smt. Sushma Swaraj
3. Shri Banwari Lal Purohit
4. Shri Baburao Paranjpe
5. Shri Rajendra Agnihotri
6. Dr. Chhatrapal Singh
7. Dr. Vallabhbhai Kathiria
8. Dr. Mallikarjun
9. Shri Shivraj V. Patil
10. Shri Suresh Kalmadi
11. Shri P. Upendra
12. Shri P. Namgyal
13. Maj. Gen. Bikram Singh
14. Shri Hannan Mollah
15. Shri A. Sampath
16. Shri C. Narasimhan
17. Shri Pratap Singh

Rajya Sabha

18. Shri Sushil Kumar Sambhajirao Shinde
19. Shri Lachman Singh

20. Shri Satchidananda
21. Shri Surendra Kumar Singh
22. Shri K.R. Malkani
23. Shri N. Thangaraj Pandian
24. Shri Adhik Shirodkar
25. Shri Suresh A. Keswani
26. Prof. Ram Kapse

SECRETARIAT

Shri V.N. Gaur — *Director*

Representatives of Ministry of Defence

1. Shri Ajit Kumar, Defence Secretary
2. Shri P.M. Nair, Additional Secretary (N)
3. Air Mshl. S.S.H. Naqvi, DCAS
4. Shri Vinod Mishra, Additional FA (M)
5. AVM J.S. Sisodia, ACAS (Plans)
6. Wg. Cdr. S. Sukumar, DDASR
7. Wg. Cdr. SA. Jagdale, DPM APMO
8. Flt. Lt. Sudhir Saxena, APM APMO

2. At the outset, the Chairman welcomed the Members of the Standing Committee and the Defence Secretary and his colleagues to the sitting of the Committee.

3. He then read out Directions 55 & 58 of the Directions by the Speaker, Lok Sabha.

4. The Committee heard oral evidence of the representatives of the Ministry of Defence on the various aspects of the subject 'Advanced Jet Trainer' (AJT).

5. A verbatim record of the evidence was kept.

(The witnesses then withdrew)

The Committee then adjourned.

MINUTES OF THE FIFTEENTH SITTING OF THE STANDING COMMITTEE OF DEFENCE (1998-99)

The Committee sat on Friday, the 8th January, 1999, from 1100 hours to 1300 hours for consideration and adoption of draft Reports on the subjects 'Advanced Jet Trainer' and 'Army Cantonments'.

PRESENT

Sqn. Ldr. Kamal Chaudhry—*Chairman*

MEMBERS

Lok Sabha

2. Smt. Bhavnaben K. Dave
3. Shri Shanta Kumar
4. Shri Dada Baburao Paranjpe
5. Shri Bachi Singh Rawat
6. Shri Sohanveer Singh
7. Shri Parvathaneni Upendra
8. Col. Sona Ram Choudhary
9. Shri Hannan Mollah
10. Shri S. Ajayakumar
11. Smt. Reena Chaudhary
12. Shri V. Sathiamoorthy
13. Shri Digvijay Singh
14. Shri Promothes Mukherjee
15. Dr. Subramanian Swamy

Rajya Sabha

16. Shri V. Kishore Chandra S. Dec
17. Shri K.R. Malkani
18. Shri A. Vijaya Raghavan

19. Shri Adhik Shirodkar

20. Dr. Raja Ramanna

21. Shri Suresh Kalmadi

SECRETARIAT

1. Shri R. Kothandaraman — *Deputy Secretary*

2. Shri K.D. Muley — *Assistant Director*

2. The Committee considered the draft Report on the subject 'Advanced Jet Trainer' (AJT). The Chairman invited Members to offer their suggestions for incorporation in the draft Report.

3. The Members suggested certain additions/modifications/ amendments and desired that those be suitably incorporated into the body of the Report.

4. The Committee then took up for consideration the draft report on the subject 'Army Cantonments'. The Members made some suggestions for incorporation in the draft Report.

5. The Committee then authorised the Chairman to finalise both the Reports in the light of verbal and consequential changes and for presentation of the Reports to Parliament. The draft Reports were then adopted.

The Committee then adjourned.

APPENDIX I

COMPOSITION OF THE STANDING COMMITTEE ON DEFENCE (1994-95)

*Shri Indrajit Gupta — *Chairman*

MEMBERS

Lok Sabha

2. Shri Ayub Khan
3. Shri Nurul Islam
4. Shri Bhupinder Singh Hooda
5. Shri Nandi Yellaiah
6. Shri Rajaram Shankarrao Mane
7. Shri Manikrao Hodalya Gavit
8. Sqn. Ldr. Kamal Chaudhry
9. Shri Vijay Naval Patil
10. Shri Ram Niwas Mirdha
11. Shri Sharad Dighe
12. Prof. Ashokrao Anandrao Deshmukh
13. Shri Umrao Singh
14. Maj. D.D. Khanoria
15. Shri Yoganand Saraswati
16. Shri Prakash Narain Tripathi
17. Shri B.L. Sharma Prem
18. Shri Jagat Vir Singh Drona
19. Shri Gabhaji Mangaji Thakore
20. Shri Pandurang Pundlik Fundkar
21. Shri Pratap Singh

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*Appointed w.e.f 23 March, 1995 *vice* Shri Buta Singh ceased to be member/Chairman consequent upon his appointment as Minister w.e.f 10.2.95.

22. Dr. Mumtaz Ansari
23. Shri Chhedi Paswan
24. Shri Chun Chun Prasad Yadav
25. Shri Abhay Pratap Singh
26. Shri Amal Datta
27. Shri Hannan Mollah
28. Shri C. Sreenivaasan
29. Maj. Gen. R.G. Williams

Rajya Sabha

30. Shri B.B. Dutta
31. Shri Misa R. Ganesan
32. Shri Hiphei
33. Shri Suresh Kalmadi
34. Shri R.K. Karanjia
35. Shri Prabhakar B. Kore
36. Shri K.R. Malkani
37. Shri A. Nallasivan
38. Shri S. Jaipal Reddy
39. Shri Satchindananda
40. Shri Sushil Kumar Sambhajirao Shinde
41. Shri Digvijay Singh
42. Shri Gopalsinh G. Solanki
*43. Shri M.P. Abdussamad Samadani

SECRETARIAT

1. Shri V.N. Gaur — *Director*
2. Shri A.K. Singh — *Assistant Director*

*Nominated *w.e.f.* 5 September, 1994.

APPENDIX II

COMPOSITION OF WORKING GROUP IV OF THE STANDING COMMITTEE ON DEFENCE (1994-95)

Shri Amal Datta—*Convenor*

MEMBERS

2. Dr. B.B. Dutta
3. Shri Manikrao Hodalya Gavit
4. Shri Prakash Narain Tripathi
5. Shri Abhay Pratap Singh
6. Shri Jagat Vir Singh Drona
7. Shri B.L. Sharma 'Prem'
8. Shri Nurul Islam
9. Shri Satchidananda
10. Shri Gopalsinh G. Solanki
11. Shri Abdussamad Samadani

APPENDIX III

COMPOSITION OF THE STANDING COMMITTEE ON DEFENCE (1995-96)

*Shri Sharad Dighe — *Chairman*

MEMBERS

Lok Sabha

**2. Shri Ayub Khan

3. Shri Nurul Islam

4. Shri Bhupinder Singh Hooda

5. Shri Nandi Yellaiah

***6. Shri Rajaram Shankarrao Mane

7. Shri Manikrao Hodalya Gavit

8. Sqn. Ldr. Kamal Chaudhry

9. Shri Vijay Naval Patil

10. Shri Ram Niwas Mirdha

11. Shri Sharad Dighe

12. Prof. Ashokrao Anandrao Deshmukh

13. Shri Umrao Singh

14. Maj. D.D. Khanoria

15. Shri Yoganand Saraswati

16. Shri Prakash Narain Tripathi

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* Appointed w.e.f. 8 February, 1996 *vice* Shri Indrajit Gupta resigned from the Chairmanship w.e.f. 22nd January, 1996.

** Ceased to be a Member of the Committee consequent upon his appointment as Minister w.e.f. 13.9.95.

*** Expired on 4.12.95.

17. Shri B.L. Sharma Prem
18. Shri Jagat Vir Singh Drona
19. Shri Gabhaji Mangaji Thakore
20. Shri Pandurang Pundlik Fundkar
21. Shri Amal Datta
22. Shri Hannan Mollah
23. Shri Pratap Singh
24. Dr. Mumtaz Ansari
25. Shri Chhedi Paswan
26. Shri Chun Chun Prasad Yadav
27. Shri C. Sreenivaasan
28. Shri Abhay Pratap Singh
29. Maj. Gen. R.G. Williams
30. Shri Kamaluddin Ahmed

Rajya Sabha

31. Shri B.B. Dutta
32. Shri Misa R. Ganesan
33. Shri Hiphei
*34. Shri Suresh Kalmadi
35. Shri R.K. Karanjia
36. Shri Prabhakar B. Kore
37. Shri K.R. Malkani
**38. Shri A. Nallasivan

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* Ceased to be a Member of the Committee consequent upon his appointment as Minister w.e.f. 13.9.95.

** Ceased to be a Member of the Committee on his retirement from Rajya Sabha w.e.f. 24.7.95.

39. Shri S. Jaipal Reddy
40. Shri Abdussamad Samadani
41. Shri Satchidananda
42. Shri Sushil Kumar Sambhajirao Shinde
43. Shri Digvijay Singh
44. Shri Gopalsinh G. Solanki
*45. Shri R. Margabandu

SECRETARIAT

1. Dr. A.K. Pandey — *Additional Secretary*
2. Shri K.L. Narang — *Deputy Secretary*
3. Shri A.K. Singh — *Under Secretary*

*Nominated w.e.f. 17.8.95.

APPENDIX IV

COMPOSITION OF THE STANDING COMMITTEE ON DEFENCE (1996-97)

Shri B.K. Gadhvi — *Chairman*

MEMBERS

Lok Sabha

2. Shri Jaswant Singh
3. Smt. Sushma Swaraj
4. Shri Banwari Lal Purohit
5. Shri Baburao Paranjpe
6. Lt. Gen. Shri Prakash Mani Tripathi
7. Shri Rajendra Agnihotri
8. Dr. Chhatrapal Singh
9. Dr. Vallabhbhai Kathiria
10. Shri Ram Chandra Benda
11. Shri Nihal Chand
12. Col. Sona Ram Choudhury
13. Dr. Malikarjun
14. Shri Shivraj V. Patil
*15. Shri Rajesh Pilot
16. Shri P. Upendra
17. Shri P. Namgyal
18. Maj. Gen. Bikram Singh
19. Smt. Nisha Amarsinh Chaudhary

*Ceased to be Member w.e.f. 8.10.96.

20. Shri H.D. Kumaraswamy

21. Shri Hannan Mollah

22. Shri A. Sampath

23. Shri C. Narasimhan

24. Shri Pratap Singh

25. Shri T. Nagaratnam

26. Shri Raja Ram Parasram Godse

27. Shri Nitish Kumar

28. Shri Major Singh Uboke

29. Shri Madhavrao Scindia

*30. Shri Suresh Kalmadi

**31. Shri Bhanu Prakash Mirdha

Rajya Sabha

32. Shri Sushil Kumar Sambhajirao Shinde

33. Shri Peter. S. Alphonse

34. Shri Lachman Singh

35. Shri Satchidananda

36. Shri Surendra Kumar Singh

37. Shri K.R. Malkani

38. Shri Satish Agarwal

39. Shri N. Thangaraj Pandian

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* Nominated w.e.f. 8.10.96.

** Nominated w.e.f. 26.2.97.

40. Shri Adhik Shirodkar

41. Shri Suresh A. Keswani

*42. Prof. Ram Kapse

SECRETARIAT

1. Dr. A.K. Pandey — *Additional Secretary*

2. Shri V.N. Gaur — *Director*

3. Shri K.D. Muley — *Assistant Director*

*Nominated w.e.f. 5.11.96.

APPENDIX V

COMPOSITION OF THE STANDING COMMITEE ON DEFENCE (1997-98)

Shri B.K. Gadhvi — *Chairman*

MEMBERS

Lok Sabha

2. Shri Jaswant Singh
3. Smt. Sushma Swaraj
4. Shri Banwari Lal Purohit
5. Shri Baburao Paranjpe
6. Lt. Gen. Shri Prakash Mani Tripathi
7. Shri Rajendra Agnihotri
8. Dr. Chhatrapal Singh
9. Dr. Vallabhbhai Kathiria
10. Shri Ram Chandra Benda
11. Shri Nihal Chand
12. Col. Sona Ram Choudhury
13. Dr. Mallikarjun
14. Shri Shivraj V. Patil
15. Shri Suresh Kalmadi
16. Shri P. Upendra
17. Shri P. Namgyal
18. Maj. Gen. Bikram Singh
19. Smt. Nisha Amarsinh Chaudhary
20. Shri H.D. Kumaraswamy
21. Shri Hannan Mollah
22. Shri A. Sampath

23. Shri C. Narasimhan
24. Shri Pratap Singh
25. Shri T. Nagaratnam
26. Shri Raja Ram Parasram Godse
27. Shri Nitish Kumar
28. Shri Major Singh Uboke
29. Shri Madhavrao Scindia
30. Shri Bhanu Prakash Mirdha

Rajya Sabha

31. Shri Sushil Kùmar Sambhajirao Shinde
*32. Shri S. Peter Alphonse
33. Shri Lachman Singh
34. Shri Satchidananda
35. Shri Surendra Kumar Singh
36. Shri K.R. Malkani
**37. Shri Satish Agarwal
38. Shri N. Thangaraj Pandian
39. Shri Adhik Shirodkar
40. Shri Suresh A. Keswani
41. Prof. Ram Kapse

SECRETARIAT

1. Dr. A.K. Pandey — *Additional Secretary*
2. Shri V.N. Gaur — *Director*
3. Shri K.D. Muley — *Assistant Director*

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* Ceased to be Member w.e.f. 9.9.97.
** Expired on 10.9.97.